USER'S MANUAL

FUTREX^{7}-62A/ZL

Body Composition Analyzer

(Percent Body Fat)

FUTREX, INC.
130 Western Maryland Parkway
Hagerstown, MD 21740

Version 1.0

FUTREX-62A/ZL USER'S MANUAL

This manual provides you with all the information needed to operate the FUTREX-62. For simplicity, in this manual the "FUTREX-62" signifies the FUTREX-62A/ZL User's Manual.

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INTENDED USE

The FUTREX-62 intended use is for estimating percent body fat in males and females ages five years and older.

CAUTION: The performance of the FUTREX-62 for subjects using diuretics or estrogen replacement therapy has not been established.

MAJOR COMPONENTS

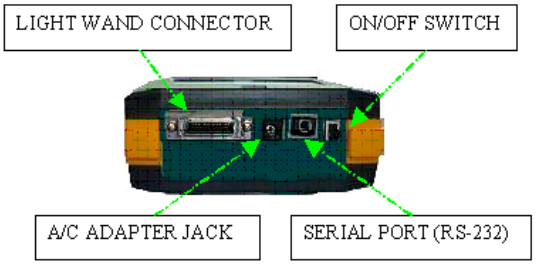


Figure 1.0 - Main Body Interfaces

Figure 2.0 - Optical Standard

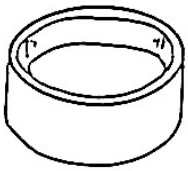


Figure 3.0 - Light Wand

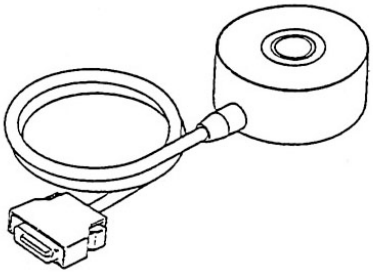


Figure 4.0 - Smart Label Printer (SLP) –Optional

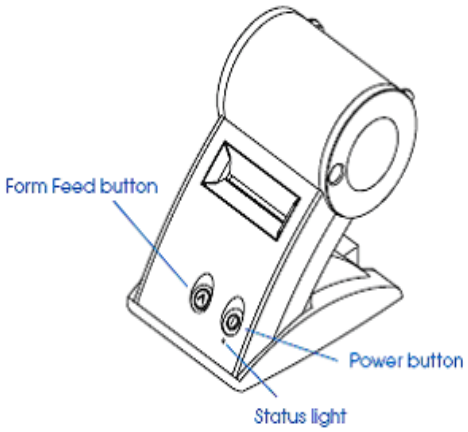


Figure 4.1 - Printer Paper Installation

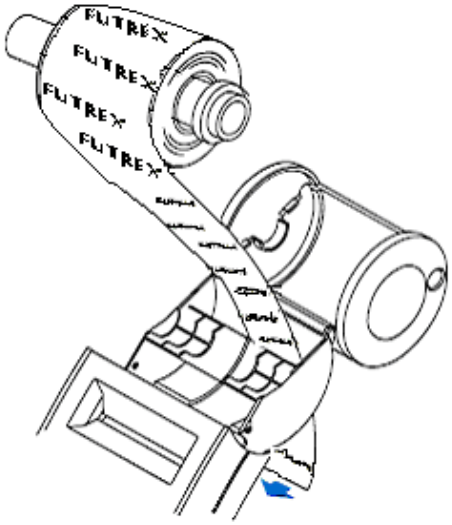


Figure 4.2 – Printer Connections

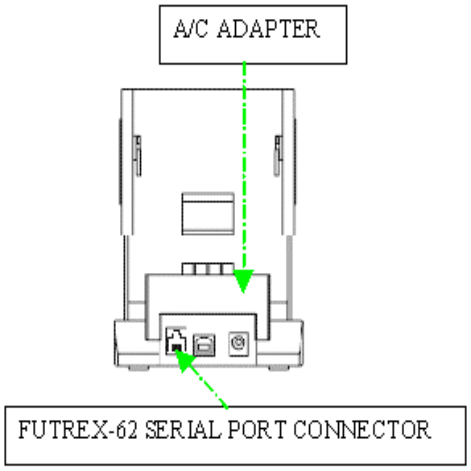


Figure 4.3 – Printer's AC Adapter

PREPARATION

1. Connecting Power

Ensure the FUTREX-62 is powered using the FUTREX-62's A/C Adapter.

2. Connecting the Light Wand

Ensure the Light Wand [Figure 3.0] Connector is attached to the Main Body [Figure 1.0] Light Wand Connector.

NOTE: Futrex recommends always leaving the Light Wand attached to the Main Body. This will avoid possible damage to the connector.

3. Connecting the Optional Smart Label Printer (SLP)

Connect the Futrex RS232 cable to the printer's serial port [Figure 4.2] and the other end of the cable to the FUTREX-62 main body serial port [Figure 1.0].

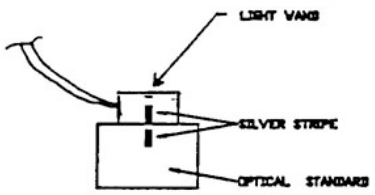
Connect the printer's AC-Adapter [Figure 4.3] to the back of the printer [Figure 4.2] and the other end to an AC power outlet.

Ensure that Futrex paper is installed in the printer [Figure 4.1].

Turn the printer ON by pressing its power button [Figure 4.0]. The printer's status light should be green indicating that the printer is ready.

BODY FAT MEASURING PROCEDURE

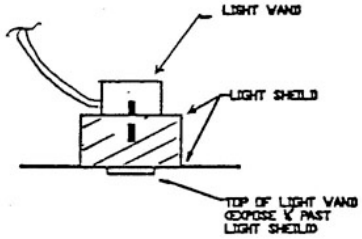
1. **Turn the power ON/OFF SWITCH on. The display will show "© 2006 Futrex, Inc.", followed by the software identification number, then "Press the ENTER KEY to begin a reading", and finally the date and time is displayed at the bottom of the screen.**



2. **Press the ENTER key to proceed with the body fat reading. The display will show "Press ZeroAdj key" along with zero adjusting instructions.**

NOTE: It is important that the silver stripe on the Optical Standard is aligned with the silver stripe on the Light Wand.

3. **Press the ZeroAdj key. The display will flash "Reading…". Once the zero adjustment has been completed, the display will read "Enter Sex:" and "1=MALE 2=FEMALE".**



Remove the Light Wand from the Optical Standard. Then install the Light Shield on the Light Wand (allow the Light Wand to protrude from the edge of the shield by about 1/8 inch (approximately 3mm)). Line up the silver stripe on the Light Wand with the silver stripe on the Light Shield.

NOTE: The Light Shield is provided to avoid external light from interfering with the estimations of percent body fat. Therefore, this shield must always be used when making a measurement.

4. **Enter User's Sex** — Press KEY 1 for MALE or KEY 2 for FEMALE gender.

5. **Enter User's Birth Date** — Enter two digits for the month and press the ENTER key
   Enter two digits for the day and press the ENTER key
   Enter four digits for the year and press the ENTER key
   Note: The above order will change based on date format (Refer to page 12 to set date format).

6. **Enter User's Height** in inches or centimeters (Refer to page 11 to set unit in either English or Metric units). Use keyboard numbers to enter the height, then press the ENTER key.

NOTE: The FUTREX-62 cannot be used on individuals whose height is less than 50 in. (125 cm) or taller than 90 in. (225 cm).

7. **Enter User's Weight** in lbs or kgs. (Refer to page 11 to select either English or Metric units). Use keyboard numbers to enter the weight, then press the ENTER key.

NOTE: The FUTREX-62 cannot measure individuals weighing less than 50 lbs (25 kgs.) or more than 500 lbs (225 kgs.).

The display will then say "READY TO READ."

8. **Place the Light Wand on the center of biceps of dominant arm (the arm you write with). Press firmly; use enough force to leave a slight ring on the arm when the Light Wand is removed. Page 10 describes the procedure for locating the exact measurement point.**

NOTE: It is important to:

- **Aim the silver stripe on the Light Wand directly toward the shoulder.**
- **Keep the arm relaxed (do not permit the subject to flex his/her muscles). A relaxed biceps can be achieved by having the subject seated while resting his arm (elbow bent) on a table. The hand should be open with the palm facing up.**
- **Use the Light Shield to block the external light. Avoid measurements under strong lights (e.g. direct sunlight).**

Press the Measurement Button on the Light Wand. The display will flash "Reading..." When the measurement has been completed, the display will read "Remove & Replace and press the button the Light Wand or press the ENTER key".

CAUTION: Do not move the Light Wand while the word "Reading" is displayed.

Remove the Light Wand and then replace it on the same point on the biceps for a second measurement. Press the Measurement Button or the ENTER key. The display will again flash "Reading..."

When the reading is completed, two alternate body fat results will be displayed:

- **Either the "1-FAT Analysis Option" will display the following results:**
  - **Percent Body Fat; Fat and Lean Weight; Basel Metabolic Rate; Body Water (in percentage and liters); and Body Mass Index,**
- **Or, the "3-Fat Analysis Option" will display the following results:**
  - **Percent Body Fat; Fat and Lean Weight; Essential, Reserve, and Excess Fat (with recommendations); Basel Metabolic Rate; Body Water (in percentage and liters); and Body Mass Index**

NOTE: Refer to page 13 to select either the 1-Fat or 3-Fat Analysis.

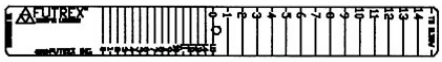
If additional people are to be measured, follow on screen instructions to proceed. When all measurements are finished, turn Power Switch to OFF.

LOCATING THE BICEPS MEASURING SITE

The estimation must always be performed at the same site on the arm -- the midpoint of the biceps. This is easily accomplished using the following technique:

- **Unfold the Biceps Locator into a straight ruler.**
- **Place the edge of the Biceps Locator labeled TO UNDERARM at the lower edge of the crease of the underarm (i.e. the anterior axillary crease of the <u>dominant</u> arm).**

<u>NOTE</u>: The arm must be relaxed with the elbow slightly bent.



Biceps Locator

- **Measure the length of the arm between the underarm crease and the center of the elbow crease (i.e. the acromion), using the scale printed on the Biceps Locator.**
  - **<u>Remember</u> the number on the ruler next to the elbow crease.**
- **Locate this same number on the ruler starting from the UNDERARM end. This estimate represents half way between the armpit and the elbow (i.e. "belly" of the biceps muscle). More technically stated: Measure along the anterior line of the biceps halfway between the antecubital fossa and the acromion.**
- **Using a pen, place a small line on the side of the arm adjacent to the Biceps Locator. This is the site where FUTREX-62 measurements should always be made.**

SYSTEM OPTIONS

System options allow English or Metric units, data and time, reading analysis, company info., printer, beeper status, and bias to be set to the user's preference.

Entering and navigating the SYSTEM OPTIONS menu:

1) Turn power ON/OFF SWITCH to ON position. The display will show and stroll "© 2006 Futrex, Inc."

2) Press the OPTION key to display "SYSTEM OPTIONS 1 of 3"

3) Press KEY 4 to switch to display "SYSTEM OPTIONS 2 of 3", repeat to display "SYSTEM OPTIONS 3 of 3"

4) Press KEY 4 to return to display "SYSTEM OPTIONS 1 of 3"

5) Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to set the English and Metric units?

Access "SYSTEM OPTIONS 1 of 3" (see SYSTEM OPTIONS Steps 1 and 2)

Press KEY 1 to enter the ENG/MET menu

Press KEY 1 to switch between English and Metric standards (current status will be displayed)

Press the CLEAR key to exit the ENG/MET menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to set the date?

Access "SYSTEM OPTIONS 1 of 3" (see SYSTEM OPTIONS Steps 1 and 2)

Press KEY 2 to enter the DATE/TIME menu

Press KEY 1 to set the date

Press KEY 1 to change the date format (current format will be displayed) or KEY 2 to change the date

Follow on-screen instructions when changing the date (current date will be displayed)

Press the CLEAR key to exit the DATE/TIME menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to set the time?

Access "SYSTEM OPTIONS 1 of 3" (see SYSTEM OPTIONS Steps 1 and 2)

Press KEY 2 to enter the DATE/TIME menu

Press KEY 2 to set the time (current time will be displayed)

Press KEY 1 to increment the hour or KEY 2 to increment the minute
Note: Hour cycles from 1 to 12 AM and PM and the minute cycles from 00 to 59.
The seconds will reset to zero after the time is adjusted. Press the ENTER key to save and exit the DATE/TIME menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to set the reading analysis (1-Fat or 3-Fat analysis)?

Access "SYSTEM OPTIONS 1 of 3" (see SYSTEM OPTIONS Steps 1 and 2)

Press KEY 3 to enter the ANALYSIS menu

Press KEY 1 to switch between 1-FAT and 3-FAT analysis (current status will be displayed)

Press the CLEAR key to exit the SET ANALYSIS menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to enter a company information? (Only for Use with the Optional SLP Printer)

Access "SYSTEM OPTIONS 2 of 3" (see SYSTEM OPTIONS Steps 1, 2, and 3)

Press KEY 1 to enter the SET CO. INFO. menu

Press KEY 1, 2, or 3 to edit company's information lines 1, 2, or 3 accordingly (current information will be displayed).

Follow on-screen instructions to enter and save company information.
Note: A maximum of 54 characters (18 characters on 3 lines) can be entered.

Press the CLEAR key to exit the SET CO. INFO. menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to turn off the optional printer?

Access "SYSTEM OPTIONS 2 of 3" (see SYSTEM OPTIONS Steps 1, 2, and 3)

Press KEY 2 to enter the PRINTER ON/OFF menu

Press KEY 1 to switch the printer on and off (current status will be displayed)

Press the CLEAR key to exit the PRINTER ON/OFF menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to turn the beeper off?

Access "SYSTEM OPTIONS 2 of 3" (see SYSTEM OPTIONS Steps 1, 2, and 3)

Press KEY 3 to enter the BEEPER ON/OFF menu

Press KEY 1 to switch the beeper on and off (current status will be displayed)

Press the CLEAR key to exit the BEEPER ON/OFF menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

How to adjust the bias?

Access "SYSTEM OPTIONS 3 of 3" (see SYSTEM OPTIONS Steps 1, 2, and 3)

Press KEY 1 to enter the SET BIAS ADJ. menu

Press KEY 1 to set the fat bias or KEY 2 to set the water bias

Press KEY 1 to adjust the bias (current bias will be displayed)

Follow the on-screen instructions to set and save the bias
Note: The bias can be adjusted from -10.0 to 10.0

Press the CLEAR key to exit the SET BIAS ADJ. menu

Press the CLEAR key to exit the SYSTEM OPTIONS menu

GENERAL SPECIFICATIONS

1)	**MEASUREMENT**	
	! **Measuring Principle:**	**Near Infrared Interactance Technique based on technology from the United States Department of Agriculture.**
	! **Measuring Range:**	**3% to 45%**
2)	**AGE LIMITS**	**Five years and older**
3)	**POWER SOURCE:**	**A/C adapter**
4)	**DIMENSIONS:**	**Main Body - 4.7 x 9.5 x 2.2 inches** **Light Wand - 2.3 (dia.) x 0.8 (length) inches**
5)	**WEIGHT:**	**2 lbs. (total) (1 kg.)**

6)	ACCESSORIES:	Optical Standard	x1
		Users Manual	x1
		Light Shield	x1
		Biceps Locator	x1
		A/C Adapter	x1
		Carrying Case	x1
		Smart Label Printer**	x1
		Serial Cable for printer**	x1
		Printer Paper (rolls)**	x2
		AC Adapter for printer**	x1

**Optional

7) ACCURACY OF THE DEVICE

Futrex instruments are as accurate as the Hydrostatic Weighing, the universally considered "Gold Standard" in body composition analysis.

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PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
1) Bad Repeatability	a) Inconsistent measurement technique.	a) Make sure you are applying enough pressure between the Light Wand and the Subject's arm. b) The silver stripes on the Light Wand must be aligned with the line on the Optical Standard when Zero Adjusting. c) The silver stripe on the Light Wand must point toward the subject's shoulder. d) Use the Light Shield to block the external light. Always avoid measurements under strong lights (e.g. direct sunlight) because errors may occur.
2) Unusually high body fat readings (40% - 50%)	a) Too much light present during the reading.	a) Do not lift the Light Wand from the Subject's biceps until either "Remove and Replace" appears on the display during the first estimation or the percent body fat is displayed after the second estimation. b) Use the Light Shield to block the external light. Always avoid measurements under strong lights (e.g. direct sunlight) because errors may occur.

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